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ABSTRACT

Intended for students, teachers, parents, and administrators in charge of educating bilingual children, the monograph provides a summarized account of the information available regarding theories and research in second language acquisition, divided into four chapters. Chapter I is an historical overview of language acquisition theories, philosophies, and beliefs dating from Biblical times to the beginning of the 20th century. The works of Socrates, Plato, Aristotle, Varro, Quintilian, Locke, Rousseau, Herder, von Humboldt, and others are discussed. Chapter II deals with modern theories, research findings, and controversies about language acquisition. It summarizes the ideas of Tomb, Leopold, Langer, Penfield, Brocks, Skinner, Chomsky, and several other theorists. Chapter III is a report of recent research on first and second language acquisition. The work of important researchers in each of the four major approaches to language acquisition (error analysis, contrastive analysis, performance analysis, and discourse analysis) is discussed in some detail. Chapter IV contains brief summaries of 50 exemplary research projects, all published through the ERIC system, on language acquisition and communicative competence. The citation for each project notes author, title, publication data, ERIC data, and includes a brief summary. (SB)

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Theories and Research on Second Language Acquisition

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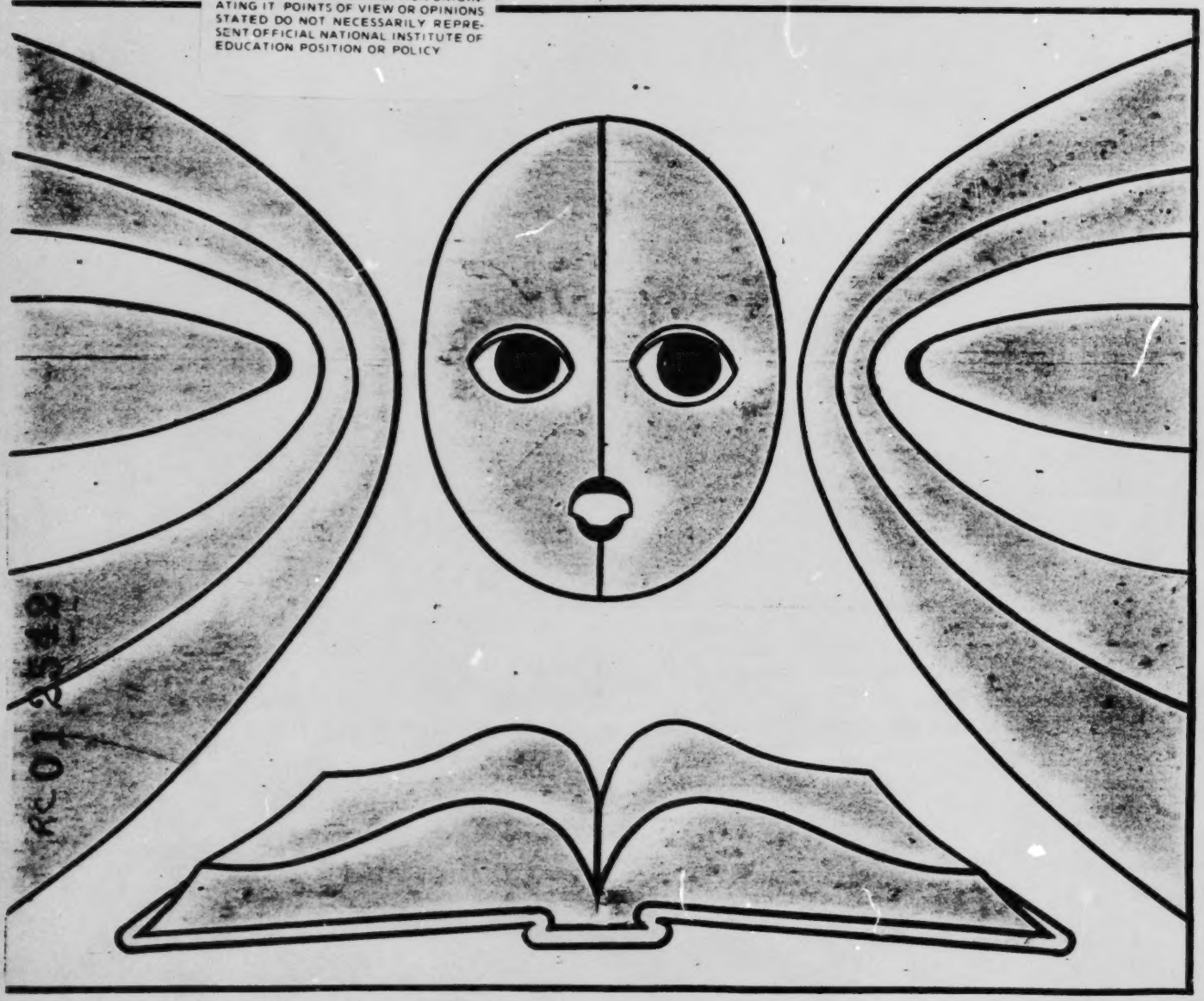

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THEORIES AND RESEARCH
ON
SECOND LANGUAGE ACQUISITION

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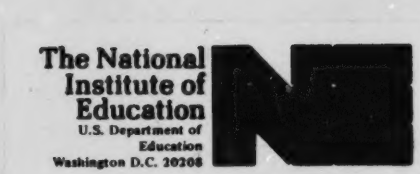

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Cover designed by: Steve Hoskins

Dedicamos este libro a nuestros hijos
Luz Patricia, Ricardo José, Pablo José,
Ximena del Carmen y Sabina Paz.

Every teacher knows that his pupils need intellectual stimulation, and that their emotional life also needs nourishment; that in some shadowy region between these two, there is an imagination which draws on both the cognitive and affective aspects of the psyche; and that ultimately this imagination is the true powerhouse of the mind-body complexes of thoughts and feelings that sit in desks in front of him (UNESCO, 1972).

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Ricardo and Luz Cornejo

PREFACE

This monograph has been prepared in order to provide information in the area of theories and research studies in second language acquisition.

The material has been compiled with the hope that it will provide up-to-date theoretical, factual, and practical information to students, teachers, teacher aides, resource teachers, parents, and administrators in charge of educating bilingual children.

You are encouraged to consider this volume as an abstracted account of what is currently available in the area of language research. It is also our hope that you will investigate the original sources of information if you feel intrigued by any of the theories or research studies reported here.

The book comprises one introduction and four chapters:

The Introduction presents an overview of language in general, with special emphasis on the place that language has as an expression and a vehicle for cultural identification.

Chapter One offers a summary of various philosophies, beliefs, and views on language acquisition through the ages. This chapter was included because we felt that there were great similarities in the modern debate between Chomsky and Skinner, the Middle Ages debate between von Herder and Rousseau, and the ancient Greece "dialogs" among philosophers such as Plato and Aristotle.

Also, the eternal debate of the "optimum age" to learn a language, which has been discussed by modern thinkers such as Andersson, Chomsky, Lenneberg, Penfield, and Langer, was already a concern at the time of ancient Egypt, as Herodotus reports in his historical essays.

It is impossible to discuss recent theories and research efforts without an awareness of the ideas and theories of the thinkers of the past.

Chapter Two summarizes the theories advocated by some of the most prestigious and prominent theoreticians and researchers of modern times.

Chapter Three reports on the various research studies conducted in the area of first and second language acquisition. Even though this book is about second language acquisition, we felt it was appropriate to include studies dealing with first language acquisition since their research methodologies were usually replicated in analyzing children's acquisition of L2.

Chapter Four includes a comprehensive listing of ERIC publications dealing with language acquisition research studies. We felt that this listing would provide an appropriate final stage in the components of the volume, all the way from beliefs in antiquity to scientific research studies in the 1980's.

Better informed educators and citizens will bring about improved educational practices which will eventually contribute to the enrichment of the affective and cognitive growth of children.

Ricardo and Luz Cornejo
Culver City, California, February 1981

INTRODUCTION

LANGUAGE IN OUR MODERN WORLD

> The language which was present with the child throughout the moments of his early life, each day and each night since his birth to soothe, instruct, encourage, scold, entertain, delight (and) interest becomes more than a means by which he receives and emits messages. This language of his fathers becomes very closely attached to his very way of thinking; it takes on powerful meanings beyond the meanings of the words we see on the surface (UNESCO, 1972).

Language is, no doubt, the most relevant expression of our education and our culture. We may dress in a certain way; we may look similar to or different from other peoples; we may enjoy certain types of dishes; we may adhere to certain types of beliefs, philosophies, and religions, but it is only when we speak, and verbally express our inner feelings and thoughts, that the rest of the world realizes who we are, our cultural background, and our level of education.

Language is species - specific to human beings. All animals possess a certain kind of communication device. Extensive research has been conducted on the communicative capabilities of ants and bees. Several scientists have analyzed the communicative talents of whales and dolphins. Recent research reports discuss the verbal capacity of chimpanzees. But all of these animals lack the human capacity for infinite productivity and creativity.

It is generally accepted now that the astonishing advances in human behavior in terms of science, technology, art, and philosophy would never have been accomplished if human beings had not developed the capacity for verbal communication.

Throughout the history of the human species, language has been the most fascinating concern for philosophers, priests, scientists, and educators. During the early stages of civilization language was considered a blessing of divine origin. Extensive explanations of this concept are found in the Judeo-Christian traditions recorded in the Bible, in Norse mythology, and in the religious writings of ancient India.

Nowadays, extensive research is taking place in the areas of neurology, physiology, and socio/cultural content of language acquisition. Brain research has provided invaluable information concerning the various physiological features of language acquisition, language loss (due to brain damage or other causes), and language recovery.

The incredible advances in communication technology have also provided important information concerning the features of storage and retrieval of information in computers and data banks.

The research efforts in the area of communicative competence have also provided crucial information concerning the acquisition, usage, and adaptation of linguistic features with respect to the socio/cultural context of the conversational speech act.

The chapters that follow offer an overview of the various beliefs, hypotheses, theories, and research studies dealing with this fascinating subject.

CHAPTER ONE

ANCIENT VIEWS OF LANGUAGE ORIGIN AND ACQUISITION

> Language is without a doubt the most momentous and at the same time the most mysterious product of the human mind. Between the clearest animal call of love or warning or anger, and a man's least, trivial word, there lies a whole day of creation, or, in modern phrase, a whole chapter of evolution (Langer, 1942: p. 261).

First and second language acquisition are two factors of human affective and cognitive growth which have intrigued and fascinated scholars, researchers, and educators through the centuries. The revival of the study of vernaculars and the emergence of the new concept of cultural pluralism have brought about a new awareness of language and its impact in human communication.

Much has been theorized about the way language is learned and developed, but divergent and conflicting theories and opinions indicate that still very little is known on the subject. Most theoretical constructs dealing with language and language acquisition come from the areas of linguistics, psychology, sociolinguistics, psycholinguistics and anthropology.

This chapter will offer a chronological overview of theories of language acquisition. The theories and opinions chosen to be included here are those that have been considered particularly relevant to the field of bilingual education, language acquisition, bilingualism and biculturalism.

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How did language emerge?

How is language acquired?

Mythological, Religious, and Philosophical Views of Language Origin and Formation

Mythologies, religions, and various cultural groups have systematically and persistently tried to explain the origin of language according to their own views of reality. Language has been considered a gift of divine origin, a product of evolution, and an invention of the human mind.

> According to Judeo-Christian beliefs, God gave Adam the power to name all things. Similar beliefs are found throughout the world. According to the Egyptians, the creator of speech was the god Thoth. According to the Babylonians, the language giver was the god Nabu. According to the Hindus, we owe our unique language ability to a female god; Brahma was the creator of the universe, but language was given to man by his wife, Sarasvati (Fromkin and Rodman, 1974: p. 17).

Biblical References to Language

The first reference to language in the Bible is found in the Old Testament, Book of Genesis:

> In the beginning, when God created the heavens and the earth, the earth was a formless wasteland, and darkness covered the abyss, while a mighty wind swept over the waters. Then God said, "Let there be light," and there was light. God saw how good light was. God then separated the light from the darkness. God called the light "day," and the darkness he called "night." Thus evening came, and morning followed - the first day. Then God said, "Let there be a dome in the middle of the waters, to separate one body of water from the other." And so it happened: God made the dome, and it separated the water above the dome from the water below it. God called the dome "the sky." Evening came, and morning followed - the second day. Then God said, "Let the water under the sky be gathered into a single basin, so that the dry land may appear."

> And so it happened: the water under the sky was gathered into its basin, and the dry land appeared. God called the dry land "the earth," and the basin of the water he called "the sea" (Genesis 1:1-10).

After creating the first human being, Adam, God created the birds, animals, and other creatures. Then, in what seems to be the first instance of delegation of responsibility on earth, He brings these living creatures to Adam for Adam to name.

> And out of the ground the Lord God formed every beast of the field, and every fowl of the air; and brought them unto Adam to see what he would call them: and whatsoever Adam called every living creature, that was the name thereof (Genesis 2:19-20).

The sacred writings of most ancient civilizations have references to the dispersion of speech and the proliferation of languages and dialects. Faced with the arduous task of propagating the word of their respective religions, the scribes of those ancient documents made various efforts to try to explain to the masses the origin of the various languages spoken in their lands.

Chapter 11 of the Book of Genesis narrates the incident of the Tower of Babel. Up to that point all the descendants of Adam and Eve had spoken one common language. By building the tower that would eventually reach the sky (heaven), they provoked the ire of God, who confused their language and scattered them all over the earth.

> The whole world spoke the same language, using the same words. While men were migrating in the east, they came upon a valley in the land of Shinar and settled there. They said to one another, "Come,

> let us mold bricks and harden them with fire." They used bricks for stone, and bitumen for mortar. Then they said, "Come, let us build ourselves a city and a tower with its top in the sky, and so make a name for ourselves; otherwise we shall be scattered all over the earth."
>
> The Lord came down to see the city and the tower that the men had built. Then the Lord said: "If now, while they are one people, all speaking the same language, they have started to do this, nothing will later stop them from doing whatever they presume to do. Let us then go down and there confuse their language, so that one will not understand what another says."
>
> Thus the Lord scattered them from there all over the earth, and they stopped building the city. That is why it was called Babel, because there the Lord confused the speech of all the world. It was from that place that he scattered them all over the earth (Genesis 11:1-9).

Throughout history, various traditions and civilizations have ascribed a supernatural or divine origin to the human gift of language, which is one of the intellectual-physiological features that separate human beings from animals. Language analysis and interpretation have permeated studies of all cultures and traditions.

> The later biblical tradition of the Tower of Babel (Gen. 11:1-9), whatever its exact place in ancient Near Eastern history, exemplifies three aspects of early thought about language: (1) divine interest in and control over its use and development, (2) a recognition of the power it gives to man in relation to his environment, and (3) an explanation of linguistic diversity, of the fact that people in adjacent communities speak different and mutually unintelligible languages, together with a survey of the various speech communities of the world known at the time to be the Hebrews (Encyclopedia Britannica, Vol. 12, p. 4836).

Language in Ancient Egypt

Every civilization of the past tried to prove that their language was the original form of speech spoken on earth for the first time. Well known is the anecdote narrated by the Greek historian Herodotus, who, maybe in an effort to ridicule Egyptian customs, told of King Psammitichus who had two children brought up in complete isolation in order to discover what language they would develop. This would be then considered the original language spoken by the first people who ever populated the earth. When the children were heard pronouncing the utterance "becos," it was then acknowledged that the Phoenician language came prior to the Egyptian language, since "becos" was the word for "bread" in Phoenician.

The whole quotation from Herodotus is included here because it represents the first "research" effort ever recorded on the acquisition of language by young children. The crucial question was: What language would a child develop if left in an isolated environment, without hearing human speech? As will be seen throughout this publication, many theories and studies have tried to answer that question.

> The Egyptians, prior to the reign of Psammitichus, regarded themselves as the most ancient of mankind. But that prince, having come to the throne, resolved to ascertain what people were the first in existence; from that time the Egyptians have allowed that the Phoenicians existed before them, but that they themselves are anterior to all others. Psammitichus, finding it impossible to ascertain, by inquiry, any means of discovering who were the first of the human race, devised the following experiment: He delivered

over to a herdsman two new-born children of humble parents, to rear them with his flock, after this manner: his orders were that no one should ever pronounce a word in the presence of the children, who were to be kept by themselves in a solitary apartment; at certain hours, goats were to be brought to them; the herdsman was to see that they sucked their fill of milk, and then go about his business. This was done and ordered by Psammitichus for the purpose of hearing what word the children would first utter, after they left off the unmeaning cries of infancy. And such accordingly was the result. For the pastor had continued during the space of two years to act according to these orders, when one day opening the door and entering, both children fell upon him, crying "becos," and stretching out their hands. The first time that the shepherd heard this, he accordingly kept quiet; but the same word occurred repeatedly, every time he came to attend to them: he therefore let his master know, and was ordered to bring the children into his presence. Psammitichus heard himself the word; and inquired what people it was that called, in their language, any thing "becos": he was informed that the Phoenicians give that name to "bread." In consequence, the Egyptians, having deliberately weighed the matter, gave place to the Phoenicians and granted they were the more ancient than themselves (Herodotus, History, II, 2, as quoted by Salus, 1969: p. 2)

Of particular interest is the fact that both the Bible and Herodotus felt that the original human beings on earth spoke only one language, and that all modern languages are in some way related to that ancient linguistic ancestor.

The Concept of Language Formation in Ancient Greece

Greek philosophers devoted a great amount of their lucubrations to discuss the origin of words. Their dialogs were particularly concerned with the dichotomy of words being "conventional" or "natural." An example of Greek fascination with etymological study is vividly presented in Plato's Cratylus, where he recorded a dialog between Socrates and two of his

disciples, Hermogenes and Cratylus. The dialog opens with Hermogenes calling Socrates to be an arbiter in his discussion with Cratylus (Salus, 1969: pp. 18-59).

> Herm. Suppose that we make Socrates a party to the argument?
>
> Crat. If you please.
>
> Herm. I should explain to you, Socrates, that our friend Cratylus has been arguing about names; he says that they are natural and not conventional; not a portion of the human voice which men agree to use; but that there is a truth or correctness in them, which is the same for Hellenes as for barbarians. Whereupon I ask him, whether his own name of Cratylus is a true name or not, and he answers "Yes." And Socrates? "Yes." Then every man's name, as I tell him, is that which he is called. To this he replies - "If all the world were to call you Hermogenes, that would not be your name." And when I am anxious to have a further explanation he is ironical and mysterious, and seems to imply that he has a notion of his own about the matter, if he would only tell, and could entirely convince me, if he chose to be intelligible. Tell me, Socrates, what this oracle means; or rather tell me, if you will be so good, what is your own view of the truth or correctness of names, which I would far sooner hear.
>
> Soc. Son of Hipponicus, there is an ancient saying, that "hard is the knowledge of the good." And the knowledge of names is a great part of knowledge.

Socrates goes on to discuss the concept of truth and correctness in the meanings assigned to the names of people, animals, and things. He suggests further discussion of the matter, to which Hermogenes replies:

Herm. I have often talked over this matter, both with Cratylus and others, and cannot convince myself that there is any principle or correctness other than convention and agreement...

Hermogenes presents his views in much detail, and a long dialog evolves between him and Socrates.

At some point in the discussion Socrates makes a strong statement concerning the fact that not every man is supposed to assign names to things, but just the legislator.

Soc. And when the teacher uses the name, whose work will he be using?

Herm. There again, I am puzzled.

Soc. Cannot you at least say who gives us the names which we use?

Herm. Indeed, I cannot.

Soc. Does not the law seem to give us them?

Herm. Yes, I suppose so.

Soc. Then the teacher, when he gives us a name, uses the work of the legislator?

Herm. I agree.

Soc. And is every man a legislator, or the skilled only?

Herm. The skilled only.

Soc. Then Hermogenes, not every man is able to give a name, but only a maker of names; and this is the legislator, who of all skilled artisans in the world is the rarest.

Socrates elaborates on a comparison between the creation of art work, garments, and instruments, and the creation of new words for naming things. He again emphasizes the role of the legislator in not only assigning names, but also

taking into consideration linguistic features such as sounds and syllables.

> Soc. Then, as to names: ought not our legislator also to know how to put the true natural name of each thing into sounds and syllables, and to make and give all names with a view to the ideal name, if he is to be a namer in any true sense?

The general idea in Socrates' discourse is his strong position against the notion of language as a divine gift. He even goes on to say "...the legislator formed the name of the God who invented language and speech;..." (p. 42). He refuses the concept that God gave language to man. He advocates that anybody insisting on the divine origin of speech is avoiding reasonable discussion of the topic.

> Soc. ...And yet any sort of ignorance of first or primitive names involves an ignorance of secondary words; for they can only be explained by the primary. Clearly then the professor of languages should be able to give a very lucid explanation of first names, or let him be assured he will only talk nonsense about the rest...(p. 59).

The Cratylus stands as one of the most comprehensive discussions on language to be identified in ancient Greece. It presented a large number of issues dealing with language origin and language formation, and contributed a basis for further analysis of linguistic phenomena.

> Studded with bizarre and fantastic etymologies, the Cratylus nonetheless contains the seeds of a century-long controversy between the analogists, who believed that language was natural, regular, and logical, and the anomalists, who pointed out the irregularities of language as proof that such a theory could not be correct (Salus, 1969: p. 3).

Besides the Cratylus, Plato also discussed language phenomena in two other dialogs: Theatetus and Sophists. While the Cratylus discussed in great detail the origin and etymologies of language, the other two dialogs dealt mostly with the relation of language, thought, and the things that we think and talk about.

In the Theatetus, Plato quotes Socrates as giving a definition of language in the following manner:

> The expression of one's thoughts by means of onomata and rhemata which, as it were, mirror or reflect one's idea in the stream (of air) which passes through the mouth (Dinneen, 1967: p. 78).

The analysis of terminology presented above exemplifies the intimate relationship between the study of language and the study of human thought throughout history. Ever since Greek culture spread throughout the Western world, the study of language has been closely aligned with the study of philosophy.

> The history of every discipline shows certain trends; in linguistics, these seem to be of two major types: philosophizing and classifying...the waxing and waning of these two activities delimit the interest in language (and languages) over the past two millenia: First we find speculation concerning the origin and ultimate meaning of language, then (for a thousand years or so) the emphasis is on the description of Latin and Greek and (later) on the use of these descriptions in describing the Western European languages. In the seventeenth century, philosophizing again begins to find favor, only to be stifled in the early nineteenth century by the descriptive emphasis of historical comparative research. And finally, within the past decades, we see the interest in philosophical grammar begin to grow once more (Salus, 1969: p. 2).

Of particular interest to the reader who would like to go beyond this historical outline, is to draw a parallel between the opposing views of Plato and Aristotle who lived in Ancient Greece (Plato: 428-348 B.C.; Aristotle 384-322 B.C.), and those offered by Skinner and Chomsky during the 1950's.

Aristotle also analyzed the etymological aspects of language, but he gets into deeper analysis of the parts of speech. In his De Interpretatione (On Interpretation), he opens the article by presenting his basic concept of language:

> Let us first of all define noun and verb, then explain what is meant by denial, affirmation, preposition, and sentence. Words spoken are symbols of signs of affections or expressions of the soul; written words are the signs of words spoken. As writing, so also is speech not the same for all races of men. But the mental affections of themselves, of which these words are primary signs, are the same for the whole of mankind, as are also the objects of which those affections are representations of likenesses, images, copies...(Salus, 1969: p. 4).

Aristotle's statement that "written words are the signs of words spoken" finds its practical application in modern pedagogy in the new approach to the teaching of reading popularized under the name of "language-experience approach to reading."

From Varro to von Humboldt

Marcus Terentius Varro (116-27 B.C.) compiled the first comprehensive Latin grammar in a treatise entitled De Lingua Latina. The volume originally comprised twenty-five books,

of which only five have survived. In this study, Varro classified the study of language into three categories: etymology, morphology, and syntax.

Speaking of etymological analysis of words, he says:

> There are two elements, rest and motion: whatever is at rest or moves is a body; where it is moved is place, and while it is being moved, we have time; the fact of its movement is action. So it appears... there is a quadripartite division of all original things, body and place, time and action. And just as there are four prime genera of things, so too of words (Dinneen, 1967: p. 110).

Quintilian (ca. A.D. 35-90) was one of the first philosophers who dealt with the issue of language acquisition. He emphasized that education started in the crib and continued throughout the life of the individual. He also insisted that the most crucial indicator of the person's level of education was the way that person used language.

The modern controversy concerning the "optimum age" to start studying a second language seems to have been a topic of discussion in ancient Rome too. Romans were fascinated with both the culture and the language of the Greeks. Thus, the teaching of the Greek language was one of the most important components of Roman curriculum.

> Quintilian was very obviously concerned with the problem of the right age to introduce the two languages. The Romans presumably would have agreed about the desirability of introducing the second language early. "Lessons," says Quintilian, "are to begin as soon as the child is able to speak" (UNESCO, 1965: p. 68).

In medieval times, after the collapse of the Roman Empire, the spread of Christianity had a significant influence on the study of languages. The Bible was translated into several languages, and there was great interest in teaching and learning vernacular languages. The three most important translations of the Bible were done in this period: the Gothic translation (fourth century), the Armenian translation (fifth century), and the Old Church Slavonic translation (ninth century).

In the seventh century, Saint Isidor of Seville (d. 636) wrote his Etymologiae, which included a large number of etymologies, most of them based on folk definitions and philosophical speculations about language origin and formation.

Saint Isidor explains etymology in the following manner:

> Etymology is the origin of words, whence the meaning of a noun or verb is gathered by interpretation...A knowledge of this is often necessary for interpretation, since when we see where a name comes from, we more quickly understand its meaning. The study of any subject is easier when the etymology of the terms used in it is understood (Dinneen, 1967: p. 148).

St. Anselm wrote his De Grammatico in mid-eleventh century. His work had great impact in the development of modern linguistic thought.

> ...the importance of this treatise becomes obvious only when we look at the importance of Saussure and his distinction between the signified and the signifier. It is the notion of linguistic sign that seems to find its roots here, and it is within the development of the field of semantics - the study of meaning - that (St.) Anselm becomes important (Salus, 1969: p. 8).

The Renaissance also witnessed a new awareness of language. This was the time when most grammars of modern languages started to be delineated. The first Spanish and Italian Bibles were written in the fifteenth century; the first Hebrew grammar was written in the sixteenth century, and the first French grammar was written at the end of the sixteenth century. There was great emphasis on the study of the emerging Romance languages.

> Peter Ramus (born ca. 1515) is well known among the Renaissance grammarians. Ramus wrote Greek, Latin, and French grammars and set up a theory of grammar in his Scholae. He stressed the need to follow native speakers in modern languages as the key to usage (Salus, 1969: p. 9).

It was by this time that the controversy between Empiricists and Rationalists got started. The Academie Française, which had been founded by Cardinal Richelieu in 1635, started a series of debates on the subject of language and thought.

The ancient controversy between Analogists and Anomalists gave way to the new ideas of Empiricists and Rationalists. The most influential empiricist was Locke, and Descartes was the champion of the Rationalists. The basic notion being discussed at the time was the existence or absence of "innate ideas."

> Locke, Hume, Berkely, and the other Empiricists vigorously denied the existence of any ideas present in the human mind prior to experience; Descartes and the Rationalists regarded innate ideas as the basis of our knowledge, and included the ideas of number and figure and the elements of logical and mathematical reasoning as part of this basis (Salus, 1969: p. 11).

Some centuries later, the controversy would again appear in the writings of Skinner, who presented an empiricist view of language, and Chomsky, who advocated a rationalist view of language.

Condillac (1715-1780), one of Locke's disciples, wrote his Traite des Sensations in 1754, launching the study of word history. He is considered the pioneer of the modern study of word origins.

Rousseau wrote his Essay on the Origin of Languages some time between 1749 and 1755 (it was published posthumously in 1782). Both Rousseau and Condillac felt that language evolved from imitation of gestures and primitive cries.

> Speech distinguishes man among the animals; language distinguishes nations from each other; one does not know where a man comes from until he has spoken (Rousseau, 1966: p. 1).

Rousseau placed great importance on gesture and what in modern terminology would be called "body language." He stated that both cries and gestures appeared at about the same time in human development, but cries conveyed meaning more accurately, thus evolving more rapidly than gestures as a means of communication.

> Pantomime without discourse will leave you nearly tranquil; discourse without gestures will wring tears from you. The passions have their gestures, but they also have their accents; and these accents, which thrill us, these tones of voice that cannot fail to be heard, penetrate to the very depths of the heart, carrying there the emotions they wring from us, forcing us in spite of ourselves to feel what we hear. We conclude that while visible signs can render a more exact imitation, sounds more effectively arouse interest (Rousseau, 1966: p. 4).

The eighteenth century was also a time of great concern about the origin of language. In 1769, the Prussian Academy opened a contest for individuals to submit scholarly articles dealing with the issue of language acquisition and language origin. In 1772, J. G. Herder submitted an article entitled "Essay on the Origin of Language," which won the award for that year.

Herder advocated that language was the content and the form of human thought, and that language and thought were inseparable. While Aristotle had stated that language was dependent upon thought, Herder stated that both develop simultaneously. He also stressed the belief that language was the only vehicle through which both the culture and thought of a people were accessible to individuals from other cultures. He impassionately denied the celestial origin of human language.

> While still an animal, man already has language. All violent sensations of his body, and among the violent, the most violent, those which cause him pain, and all strong passions of his soul express themselves directly in screams, in sounds, in wild inarticulate tones (Herder, 1966: p. 87).

Herder advocated that both men and animals had developed some kind of primitive language, and then man, because of developing his intellectual capacity, had refined his language and developed human speech.

> A refined, late-invented metaphysical language, a variant--perhaps four times removed--of the original wild mother of the human race, after thousands of years of variation again in its turn refined, civilized,

> and humanized for hundreds of years of its life: such a language, the child of reason and of society, cannot know much or anything of the childhood of its earliest forebear (Herder, 1966: p. 91).

After a lengthy discourse on the origin and development of the various modern languages, Herder concludes that they are all the result of many centuries of linguistic evolution.

> One of the upholders of the divine origin of language... discerns and admires divine order in the fact that all the sounds of all the languages known to us can be reduced to some twenty odd letters. Unfortunately, the fact is wrong, and the conclusion still wronger. There is no language whose living tones can be totally reduced to letters, let alone to twenty. All languages--one and all--bear witness to this fact. The modes of articulation of our speech organs are so numerous (Herder, 1966: p. 92).

After giving quite a few examples of language development and language change and emphasizing the animal origin of language, he adds:

> Thus the fact is wrong and the conclusion wronger: It does not lead to a divine but--quite on the contrary--to an animal origin (Herder, 1966: p. 94).

Wilhelm von Humboldt wrote his "Concerning the Variety of Human Language and its Influence on the Intellectual Development of Mankind" from 1830 to 1836. His most important contribution to the theory of language was the concept that the structure and the character of a language are an expression of the inner life and the knowledge of its speakers, and that languages are different from each other in the same manner as individuals are different from each other.

> ...it must be true that languages have always developed alongside of and within flourishing national groups, and been spun out of their spiritual character, retaining various of its special limitations. It is

> no empty play with words if we say that "language" has its spontaneous origin in itself, in divine freedom, but that "languages" are bound to and dependent on the national groups which speak them (von Humboldt: 1963: p. IX).

von Humboldt was basically a humanist, who saw language as the "formative organ of thought." He believed that an intellectual activity performed by human beings is externalized and shared by them through the sounds of speech. He believed in a harmonious balance between the mind and the organs of hearing and speech.

> Just as thinking in its most intimately human aspects is a yearning from darkness to see the light, from restrictedness and constraint toward infinity, so sound streams outward from the depths of the breast and finds in air a wonderfully appropriate mediating material, the subtlest and most mobile of all elements, whose seeming incorporeality accords with even the conception of spirit (von Humboldt, 1963: p. XII).

We would like to bring this chapter to a close by again citing von Humboldt, since we sincerely believe that his final statements exemplify the debate that through the centuries has led linguists, philosophers, and educators in their search for the origin, acquisition, and development of language.

> Language is mine because I produce it as I do. And because the reason I produce it as I do lies in the speaking and having spoken of all the generations of men, insofar as uninterrupted linguistic communication reaches, it is the language itself that gives me my restrictions. But that which restricts and confines me came into language by human nature of which I am a part, and whatever is strange in language for me is therefore strange only for my individual momentary nature, not for my original, true nature as a human being (von Humboldt, 1963: p. XVII).

CHAPTER TWO

MODERN THEORIES OF LANGUAGE ACQUISITION

At the beginning of the nineteenth century, Alexis de Tocqueville visited the United States of America, and as a result of his visit he wrote the now legendary treatise Democracy in America (1838). In that publication, he made the following poignant statement about the acquisition of language by infants, and the way that educators and researchers should observe and record language development in small children.

> We must watch the infant in his mother's arms; we must see the first images which the external world casts upon the dark mirror of his mind, the first occurrences which he witnesses; we must hear the first words which awaken the sleeping powers of thought, and stand by his earliest efforts--if we would understand the prejudices, the habits, and the passions which will rule his life. The entire man is, so to speak, to be seen in the cradle of the child (p. 17).

It is particularly interesting to read de Tocqueville's statement, especially in terms of the popularity of the new approaches to discourse analysis and communicative competence in the late 1970's and early 1980's.

Speaking of the psychological aspects of language acquisition, several theoreticians during the fifties advocated that children do not learn by imitation, but by a process of intellectual maturation that leads them to match their incipient speech sounds with the environment.

At the beginning of the 20th century, Ferdinand de Saussure wrote that the analysis and study of modern languages has gone through three general stages: grammar, philology, and comparison of languages. He felt that the task of linguists was to try to identify the forces that acted upon the original language or languages and made them diversify and evolve, to reconstruct the parent linguistic stock of each family of languages, and to record the history of each language spoken in the world. Salus (1969:3) added "speculative philosophy" to the three stages proposed by Saussure,"for it is with 'philosophia' that the formal study of language in the West began..."

The innate ability of small children to learn more than one language has been attested to by a number of language specialists and lay people throughout the world. In a publication that has been widely quoted in the specialized literature, Tomb (1925) reported on the incredible capacity of children in Bengal to interact verbally with various individuals speaking different languages.

> It is common experience in the district in Bengal in which the writer resides to hear English children of three or four years old who have been born in the country conversing freely at different times with their parents in English, with their ayahs (nurses) in Bengali, with the garden-coolies in Dantali, and with the house-servants in Hindustani (p. 54).

Tomb, and other psychologists who adhered to the same school of thought, advocated that small children had an "intuitive" ability to learn languages. He stated that

children had an intuitive capacity, not based on "intelligence," to place appropriate meanings on the spoken word. In this respect, he pointed out further:

> ...that a child's capacity for learning language is of a subconscious nature and does not depend on "intelligence," for if the latter were the case it is reasonable to assume that...the parents would pick up the various vernaculars more quickly than their children...(p. 55).

Tomb also hypothesized about small children learning their mother tongue, and compared their intellectual strategies to those employed by adults who tend to learn languages by too much emphasis on memorization and repetition of grammatical rules.

> It is commonly assumed that children learn a language as adults do, by the conscious memorizing of parts of speech, moods, tenses, etc., but a moment's reflection will show that this cannot be so in the ordinary case of infants learning their mother tongue. The parts of speech, moods, tenses, etc. of which cannot be consciously apprehended by them as such, or their use explained to them through the medium of language since they possess (sic) none (p. 53).

One of the most relevant and widely publicized studies of the early 40's was the longitudinal study conducted by Werner Leopold (1939-49). He studied and recorded in much detail the speech development of his daughter, Hildegard. He was particularly careful and thorough in his reporting about the way the child acquired the capacity to attach meaning to her initial utterances.

> The diary at this point reveals my astonishment at the course which the development took. From the literature on child-language I had expected a stage of mechanical sound-imitation, with later induction of meanings for the words thus acquired. In Hildegard's case, the phase of mechanical imitation was completely lacking, meanings were always developed before sound-forms. The impulse for any kind of imitation was strikingly weak in this child (p. 22).

Gesell (1940) and associates discuss the development of language in small children. They theorize that language acquisition at an early age is basically a variety of play interaction between infants and those people in their immediate environment.

> Spoken language appears first as a relatively independent activity, engaged in as play for its own sake, as an accompaniment to other types of behavior or as a social response without a specific communicative aspect...Even as late as 18 months, "talking" continues to be largely a form of play, as an accompaniment to an action, rather than a surrogate for it (p. 190).

Susanne Langer (1942) has written one of the most beautiful and most inspiring treatises on language, where she has blended her own personal beliefs, her philosophical view of the world, and scientifically documented data. Her opening statement sets the tone for the whole chapter on language.

> Language is without a doubt the most momentous and at the same time the most mysterious product of the human mind. Between the clearest animal call of love or warning or anger, and a man's least, trivial word, there lies a whole day of creation, or, in modern phrase, a whole chapter of evolution (1967: p. 3).

Langer compares the capacity for communication shown both by animals and by human beings and states:

> Animals...are one and all without speech. They communicate, of course; but not by any method that can be likened to speaking (p. 4).

When discussing the process of socialization, and the place that language has in it, Langer states that children continue to utter those sounds which are reinforced by the reaction from the people around them.

> In a social environment, the vocalizing and articulating instinct of babyhood is fostered by response, and as the sounds become symbols their use becomes a dominant habit. Yet the passing of the "instinctive phase" is marked by the fact that a great many phonemes which do not meet with response are completely lost (1967: p. 21).

In discussing Tomb's theory that small children have a "linguistic intuition" which they lose as they grow older, Langer agrees with the theory in general, but not with the concept of "intuition," which she considers "a slippery word" (p. 21). She then emphasizes the concept of the "optimum age" which has been advocated by a number of theoreticians and researchers throughout history.

> It is better, perhaps, to say that there is an "optimum period of learning," and this is a stage of mental development in which several impulses and interests happen to coincide: the lalling instinct, the imitative impulse, a natural interest in distinctive sounds, and a great sensitivity to "expressiveness" of any sort (1967: p. 21).

Langer has hypothesized that speech must have developed in a human community where other basic forms of symbolism were already present. After having developed such symbolic behaviors as dreaming, adhering to superstitions, and performing

rituals, the primitive community was then able to develop language through a process that went from the primitive symbolic behaviors to dance, to pantomime, to ritual symbolic gestures, to voice. According to this hypothesis, "voice," or human speech, is then the latest and most sophisticated development of symbolic verbal behavior in human beings.

Also discussing the psychological aspects of language acquisition, Osgood and Sebeok (1954) indicate that the various profiles of speech sounds do not show any differences across cultural, ethnic, or language groups. They further state that the babbling that takes place later is reinforced by parents and relatives who motivate and encourage the child to continue to produce speech sounds.

> Analysis of sound profiles at the babbling stage indicates that differences are evident between infants in different language groups. How do these differences arise?...The writers incline to the notion that secondary reinforcement is a necessary and sufficient condition to explain this phenomenon (pp. 128-129).

In 1954, McCarthy expanded on the ideas previously presented by Leopold, and stated that phonological patterns are not developed through imitation but as the result of maturation.

> Most present-day psychologists seem to agree with the opinion of Taine (1876) that new sounds are not learned by imitation of the speech of others, but rather that they emerge in the child's spontaneous vocal play more or less as a result of maturation, and that the child imitates only those sounds which have already occurred in its spontaneous babblings (pp. 494-495).

The author also discusses the gap that exists between the utterance of a speech sound and its representation in symbolic terms. She concludes:

> There is a tremendous psychological gap which has to be bridged between the mere utterance of the phonetic form of a word and the symbolic or representational use of that word in an appropriate situation (p. 501).

Penfield (1959: pp. 220-40) has compared the learning habits of man to those of advanced animal species. He has stated that animals have some "racial memories" that guide them. These account for the ability of the horse to return home from any place to which it has been taken, the orientation capacity of the homing pigeon that enables it to return to its place of origin, and the radar-like orientation of bats. According to Penfield, man has not developed these capabilities, but he does have an invaluable asset--the ability to learn. This ability enables the infant to develop his speech mechanism to full capacity. In the initial stages of development the child learns the meaning of words. This process also seems to be typical in animals; but, at an advanced stage of development, the animal is left far behind because the child begins to speak.

> The brain of man is distinguished from the brain of all other mammals by its possession of elaborate mechanisms for the function of speech. There are four separate areas of the human cerebral cortex devoted to vocalization. In the dominant hemisphere there are three or four areas that are specialized for the formulation of speech and the acquisition of language (p. 235).

Penfield has written that the "direct" or "mother" method of learning a language at home is successful because of (a) a neurophysiological factor and (b) a psychological factor. The neurophysiological factor is important because the brain of the child has an "inborn" capacity for learning languages which diminishes with age because of the "appearance of the capacity for reason and abstract thinking." He mentions as an example immigrant families in which small children learn the new language in a relatively short period of time while the parents of the children struggle for years before being able to develop an incipient proficiency in the language. Penfield feels that the child's brain is plastic and moldable, as well as highly sensitive to recovery. He mentions cases of children who have been able to "relearn" their language after serious damage to the brain cortex. The child also has a "psychological urge" to learn a language because his learning is for him a method or technique for getting to know his environment, a way to meet his needs, and, finally, a means of satisfying his inborn curiosity and interest.

> Before the age of nine to twelve, a child is a specialist in learning to speak. At that age he can learn two or three languages as easily as one (p. 235).

According to Penfield, there are two aspects in the language-learning process: the imitative and the inventive. The child starts by imitating his mother and other members of his environment but soon develops his own initiative

in uttering sounds and meaningful speech segments. "The mother helps, but the initiative comes from the growing child" (p. 240).

In discussing the way that children learn languages, Penfield states that their language acquisition is the result of the children's curiosity about life, about their environment, and a means to getting the things they need and achieving the goals they set for themselves.

> For the child at home, the learning of language is a method of learning about life, a means of getting what he wants, a way of satisfying the unquenchable curiosity that burns in him almost from the beginning. He is hardly aware of the fact that he is learning language, and it does not form his primary conscious goal (p. 241).

Penfield agrees with Tomb with respect to the capacity that small children have for acquiring a second or third language.

Penfield attributes this capacity to the development of the cerebral cortex, and the changes that take place in the composition of the brain cells as people advance in age.

> A child, for example, who is exposed to two or three languages during the ideal period for language beginning, pronounces each with the accent of his teacher. If he hears one language at home, another at school, and a third, perhaps, with a governess in the nursery, he is not aware that he is learning three languages at all. He is aware of the fact that to get what he wants with the governess he must speak one way, and with his teacher he must speak in another way. He does not reason it out at all (p. 253).

Brooks (1960) presents his views on language acquisition in the following manner:

> In the case of the infant, there is a fascinating contest between his inborn potential for the use of "parole" and the community's highly systematized practice of "language"[Brooks is here borrowing "parole" and "language" from Saussiere's terminology, and is equating them with the "dialect" of the community and the "idiolect" of the individual](p. 27).

Andersson (1960) states that there is an "optimum age" for learning a second language. According to his views, the capacity for acquisition of language is optimum from early childhood to about the age of ten. He has theorized that "conditioned learning" is at its peak at birth and diminishes through the years, while "conceptual learning" is very weak at birth and increases with maturity. These two types of learning have what a statistician would call "negative correlation" (p. 303).

> (the) optimum age for the beginning of the continuous learning of a second language seems to fall within the span of ages four through eight, with superior performance to be anticipated at ages eight, nine, ten. In this early period the brain seems to have the greatest plasticity and specialized capacity needed for acquiring speech (p. 304).

Lenneberg (1960, 1964, 1967) approaches the study of language from a biological point of view. He states that the biological study of language is concerned mainly with the human brain. He indicates that in the biological approach to the study of language it is important to distinguish between "speech" and "language." He says that speech is the capacity to construct meaningful utterances. The importance of this separation lies in the fact that many human beings can produce speech sounds without expressing themselves in language

patterns, while there are also many people who have never been able to speak and, nevertheless, have developed their capacity for language.

Lenneberg maintains that children will learn a language only if they are in an environment where they can hear and see people interacting through verbal behavior. He also indicates that language must be learned, which does not necessarily mean that it can be taught. He states that children have a biological capacity to learn a language. Thus, we do not "teach" children language.

> There is a tendency, even among sophisticated social scientists, to regard language as a wholly learned and cultural phenomenon, an ingeniously devised instrument purposefully introduced to subserve social functions, the artificial shaping of an amorphous, general capacity called "intelligence." We scarcely entertain the notion that man may be equipped with highly specialized, innate propensities that favor and, indeed, shape the development of speech in the child and that the roots of language may be as deeply grounded in our biological constitution, as for instance our predisposition to use our hands. It is maintained that clarity on the problem of the biological foundation of language is of utmost importance in formulating both questions and hypotheses regarding the foundation, mechanism, and history of language (1960: p. 1).

Lenneberg advocates a biologically-based language acquisition theory. His theory is based on five biological premises, all empirically verifiable:

1. Cognitive function is species-specific.
2. Specific properties of cognitive function are replicated in every member of the species.
3. Cognitive processes and capacities are differentiated spontaneously with maturation.

4. At birth, man is relatively immature; certain aspects of his behavior and cognitive function emerge only during infancy.

5. Certain social phenomena among animals come about by spontaneous adaptation of the behavior of the growing individual to the behavior of other individuals around him (1967: pp. 371-73).

The implications are that the capacity for cognitive processes indicates the existence of a potential for language. This capacity develops as the result of physical maturation. Language acquisition and development are then, according to Lenneberg, the result of maturation and its inter-relationship with environmental conditions.

> It might be more fruitful to think of maturation, including growth and the development of behavior such as language as the traversing of highly unstable states; the disequilibrium of one leads to rearrangements that bring about new disequilibria, producing further rearrangements, and so on until relative stability, known as maturity, is reached. The disequilibrium state called language-readiness is of limited duration. It begins around two and declines with cerebral maturation in the early teens. At this time, apparently a steady state is reached, and the cognitive processes are firmly structured, the capacity for primary language synthesis is lost, and cerebral reorganization of function is no longer possible (1967: pp. 376-377).

Two major approaches to the study of language have been identified in recent years: the learning theory approach and the linguistic approach.

The learning theory approach is exemplified in the theories of Skinner (1957), who cites the relevance of the stimulus-response associations and mediating processes in language learning. This position maintains that language is a learned behavior, a system of habits by means of which verbal behavior

is developed through a continuum of stimulus-response-reinforcement patterns. Thus, motivation (drive) and reward (reinforcement) are the basic factors in the learning process.

Skinner has applied his theories of learning to language acquisition. He considers language behavior the result of operant conditioning. To him, speech is a response whose strength is determined by the value of the reinforcement applied to it. Consequently, demands, commands, and requests are reinforced by the satisfaction of specific needs.

> In all verbal behavior under stimulus control there are three important events to be taken into account: a stimulus, a response, and a reinforcement. These are contingent upon each other, as we have seen, in the following way: the stimulus, acting prior to the emission of the response, sets the occasion upon which the response is likely to be operant discrimination, the stimulus becomes the occasion upon which the response is likely to be emitted (p. 81).

The linguistic approach, on the other hand, contends that the human being has an innate propensity for language acquisition. Thus, language is a product of genetics and evolution, and the human organism has an inherent capacity to process linguistic data. Consequently, language is a structure of systematic inter-related units. The most eminent representative of the linguistic approach is Noam Chomsky (1959)(1965). Chomsky advocates the transformational theory of language acquisition.

> It seems plain that language acquisition is based on the child's discovery of what, from a formal point of view, is a deep and abstract theory--a generative grammar of his own language--many of the concepts and principles of which are only remotely related to experience by long and intricate chains of unconscious quasi-

> inferential steps. A consideration of the character of the grammar that is acquired, the degenerate quality and narrowly limited extent of the available data, the striking uniformity of the resulting grammars, and their independence of intelligence, motivation and emotional state, over wide ranges of variation, leave little hope that much of the structure of the language can be learned by an organism initially uninformed as to its general character (1965: p. 58).

It is quite interesting to compare Chomsky's position in the 1960's with that of Langer in the 1940's. Chomsky indicates that the acquisition of language could be due to "millions of years of evolution or to principles of neural organization that may be even more deeply grounded in physical law" (1965: p. 59).

This chapter has attempted to present a compressed capsule of the speculations, theories, research findings, and controversies dealing with the fascinating topic of language acquisition.

Finally, we would like to share with you Otto Jespersen's theory of language acquisition. He suggests that language derived from singing; it is an expressive form of affective aspects of human life; it is not a communicative need. For Jespersen (1922), love is the most important stimulus for language acquisition and development:

> Language was born in the courting days of mankind; the first utterances of speech I fancy to myself like something between the night love lyrics of puss upon the tiles and the melodious love songs of the nightingale (p. 39).

CHAPTER THREE

RECENT RESEARCH ON SECOND LANGUAGE ACQUISITION

During the second half of the twentieth century, there has been great interest in the analysis of second language acquisition in children. The equal rights movement, the new innovative approaches to the education of minorities, the advances in technology, and the new discoveries in the areas of pedagogy, psychology, sociology, linguistics, and related disciplines have brought about a new awareness of language learning, both as mother tongue and as second language.

In a very comprehensive review of research efforts on second language acquisition, Hakuta and Cancino (1977) classified the various studies into four major analytical approaches: contrastive analysis, error analysis, performance analysis, and discourse analysis.

The authors explain their classification model as follows: Contrastive analysis encompasses the investigation of the grammatical features of the two languages:

> Assume that we had in our possession a year-long record of all the conversations of a second-language learner since initial exposure to the target language. One way to analyze the data, if we knew the grammars of both the native and the target languages, would be through a "contrastive" analysis of the two language structures. Where the two languages differ we would expect errors, and our predictions could be tested against the acquisition data (p. 295).

Error analysis is described as a research effort where errors produced by the language learner depart from the standard or norm of the language being learned:

> Another way to proceed in the analysis would be to catalogue all the systematic deviations - the "errors" - in the learner's speech from the target language norm. These deviations, or errors, could be classified into whatever categories our theory might dictate (p. 295).

Performance analysis is conducted by scrutinizing the child's proficiency in the usage of specific linguistic features:

> If we want more specific information than that provided by error data, we could examine "performance" on particular linguistic structures (such as negatives and interrogatives) and look for both the distributional characteristics of errors and correct usage of those structures (p. 295).

Discourse analysis is explained as the type of research that studies the way linguistic features are used in everyday, spontaneous conversational flow.

> Or, we could look not just at linguistic structure but at "discourse" structure as well. For example, we could ask how linguistic forms might be derived from the way in which they are used in conversation (p. 295).

The classification by Hakuta and Cancino appears to be one of the best typologies of research on language acquisition offered in recent times. This chapter, organized following the same classification, will include some of the relevant studies listed by the authors. It will also include some recent studies on topics related to second language acquisition.

Contrastive Analysis Approach to Language Acquisition Research

During and immediately after the Second World War, the nation's educational system developed a deep awareness of

the need to strengthen foreign language study at all levels of education. A number of events had shown both diplomats and soldiers that their "monolinguality" had put them at a disadvantage when negotiating with foreign citizens and government officials. Thus, a large number of language centers were established in the country. One of the most prominent ones was the language institute at the University of Michigan at Ann Arbor, Michigan.

Two pioneers of the foreign language movement in the country were Charles Fries and Robert Lado, who were the senior professors and researchers at Michigan.

Also in the 1940's and 1950's, there was much emphasis on the study of structural linguistics. "Languists" (a term coined by Nelson Brooks) felt very strongly at the time that language teaching could be greatly enhanced by a comparison (contrast) between the structure of the native language and the structure of the language being learned.

> Essentially, the goal of structural linguistics was to characterize the syntactic structure of sentences in terms of their grammatical categories and surface arrangements. (Hakuta and Cancino, 1977: p. 295)

The various publications by Fries, Lado, and their disciples, emphasized the value of descriptions of the structures of both the native language and the foreign language being learned.

It might be of interest to the reader to be aware of the fact that in the 40's and 50's practically every publication

on language and language acquisition used the term "foreign" to refer to languages other than English being learned or spoken by Americans. The term "second language" is rather new in the nation's linguistic nomenclature. It has been popularized as a result of the new awareness of the language diversity that is prevalent in the nation, and in the world at large.

As Fries (1945) stated:

> The evidence we have seems to lead to the conclusion that any adult who has learned one language (his native speech) can learn another within a reasonable time if he has sound guidance, proper materials, and if he cooperates thoroughly. The most efficient materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner (Fries, 1945: p. 9).

The views expressed by Fries and his contemporaries launched the audiolingual approach to foreign language teaching, which has been the most widely used method of instruction both in this country and abroad. Most commercially published ESL (English-as-a-second-language) materials are based on the audiolingual approach.

Contrastive analysis research concentrates on morphological, syntactic, or phonological "errors" predicted in learning a second language. For example, Vietnamese has seven tones which carry semantic value. Thus, the segment "Ma" has six different meanings according to the tone it carries: Ma(ghost), Má (mother, Mà (but) Mả (tomb), Mã (horse), and Mạ (young rice plant).

It is expected that an English-speaking or Spanish-speaking person will make errors in learning the tones that accompany each one of these utterances.

Spanish does not have any consonant blends (consonant clusters) in final position. English has 152. It is expected then that Spanish-speaking students will make errors in pronouncing words such as "desks," "one thousandth," and "dentists" since these words contain consonant groups in final position which are not part of the linguistic repertoire of Spanish speakers.

English negative statements usually have the word order:

S + Aux. Verb + Negat. + Verb

We did not go.

In Spanish, that message would be conveyed by the utterance:

No fuimos.

which is the usual way to simplify the sentence:

Nosotros no fuimos.

Spanish verb endings indicate the subject, thus it is not necessary to express the subject in most Spanish sentences. By the same token, Spanish does not use any auxiliary verb forms such as "do," or "did" to form negative utterances.

All of these characteristics of language features fall into the general area of contrastive analysis, which is basically a comparative approach to linguistic research.

Lado (1957) reinforces the statement offered earlier by Fries, when he says:

> The plan of the book rests on the assumption that we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and culture to be learned with the native language and culture of the student (p. vii).

The contrastive analysis approach has had a large number of advocates in applied linguistics circles in the country. The approach has been used extensively by foreign language scholars and students both teaching and learning a second language or dialect. The basic premise continues to be that the language specialist can contrast the lexicon, the grammar, and the phonology, that is to say, the systems of two languages and by doing so it is possible to predict areas of difficulty in learning the second language.

Writing in the late 60's, Banathy et al. (1966) stated:

> ...The change that has to take place in the language behavior of a foreign language student can be equated with the differences between the structure of the student's native language and culture and that of the target language and culture. The task of the linguist, the cultural anthropologist, and the sociologist is to identify these differences. The task of the writer of a foreign language teaching program is to develop materials which will be based on a statement of these differences; the task of the foreign language teacher is to be prepared to teach them; the task of the student is to learn them (p. 37).

Wardhaugh (1970) did a rather comprehensive critique of the contrastive analysis hypothesis of language acquisition. He suggested that the hypothesis be divided into two versions: a "strong version" and a "weak version." Among the proponents of the strong version he identifies Fries, Lado, and Banathy et al.

Wardhaugh (1974) strongly criticizes the "strong version" of the hypothesis, and indicates that its proponents set unrealistic tasks and goals for linguists, teachers, and students:

> At the very least this version demands of linguists that they have available a set of linguistic universals formulated within a comprehensive linguistic theory which deals adequately with syntax, semantics, and phonology. Furthermore, it requires that they have a theory of contrastive linguistics into which they can plug complete linguistic desciptions of the two languages being contrasted so as to produce the correct set of contrasts between the two languages (p. 13).

In his analysis of the "strong version" of the contrastive approach, Wardhaugh indicates that "phonetic theory," "phonological theory" and "contrastive theory" are not developed enough at the present time as to be able to provide reliable data for research findings. He concludes:

> Does the linguist have available to him an over-all contrastive system within which he can relate the two languages in terms of mergers, splits, zeroes, over-differentiations, under-differentiations, reinterpretations, and so on: that is, what is the state of the "contrastive theory" he is employing? In this age of linguistic uncertainty the answer to all of these questions is obvious (p. 14).

In discussing the "weak version" of contrastive analysis Wardhaugh identifies as representative of this view the two textbooks developed by Stockwell and Associates (1955). According to him, the main difference between the two versions is that proponents of the "weak version" do not make demands on linguists and teachers in terms of predicting language difficulties. They start by providing evidence of various

types of linguistic interference and provide methodological strategies intended to overcome these problems in helping students to learn a new language.

Error Analysis Approach to Language Acquisition Research

Error analysis is the second classification in Hakuta and Cancino's typology. This type of inquiry developed as a result of the controversy that surrounded contrastive analysis in the 50's and 60's. Skinner and Chomsky's debate on the nature of language acquisition contributed greatly to a redefinition of language research.

> The field of error analysis may be defined as dealing with the differences between the way people learning a language speak, and the way adult native speakers of the language use the language (Richards, 1974: p. 32).

The controversy about children learning language from peers and siblings or from adults was in full swing by the time that Skinner and Chomsky were debating about the contributing factors to language acquisition in children.

Skinner had indicated that children learn their language by observing and imitating adults, and that this was encouraged by adult's reinforcement.

Chomsky reacted strongly against Skinner's theory of reinforcement, indicating that he had found nowhere any indications that differential reinforcement played any important role in the shaping of children's language. He also refuted the idea that parents' language influences the acquisition of language by children.

> ...it seems quite beyond question that children acquire a good deal of their verbal and nonverbal behavior by casual observation and imitation of adults and other children. It is simply not true that children can learn language only through "meticulous care" on the part of adults who shape their verbal repertoire through careful differential reinforcement, though it may be that such care is often the custom in academic families. It is a common observation that a young child of immigrant parents may learn a second language in the streets, from other children, with amazing rapidity, and that his speech may be completely fluent and correct to the last allophone, while the subtleties that become second nature to the child may elude his parents despite high motivation and continued practice (Chomsky, 1964: p. 547).

Errors or deviations from the standard language spoken by adults were carefully analyzed and scrutinized. Expressions such as "He goed" (he went), "gooder" (better) and "hisself" (himself) were considered examples of some inner force that was expressed by some grammatical rule that was beginning to evolve in the mind of the learner. The developmental process of language acquisition then would lead to a transformational grammar of the language. The high frequency of occurrence of these types of errors in the speech of young children was considered to be an example of the way grammar and linguistic proficiency emerged in the speech of children.

> The child's errors, rather than being considered products of imperfect learning, came to be regarded as inevitable results of an underlying, rule-governed system which evolved toward the full adult grammar. From this new perspective the child, in the eyes of researchers, gained the status of an active participant in the acquisition of language (Hakuta and Cancino, 1977: p. 297).

Richards (1973) reports on a study designed to identify the various types of errors found in the speech of children learning a second language. In discussing types of errors and their origin, Richards identifies three kinds of errors: interference errors, intralingual errors, and developmental errors.

> Excluded from discussion are what may be called "interference" errors; that is, errors caused by the interference of the learner's mother tongue. A different class of errors is represented by sentences such as "did he comed," "what you are doing," "he coming from Isreal," "make him to do it," "I can to speak French." Errors of this nature are frequent regardless of the learner's language background. They may be called "intralingual" and "developmental" errors (Richards, 1973: p. 97).

In terms of the relevance of errors with respect to the acquisition of "correct" grammatical patterns, the author states:

> Rather than reflecting the learner's inability to separate two languages, intralingual and developmental errors reflect the learner's competence at a particular stage and illustrate some of the general characteristics of language acquisition (Richards, 1973: p. 97).

Richards defines "interlingual errors" as "those which reflect the general characteristics of rule learning, such as faulty generalization, incomplete application of rules, and failure to learn conditions under which rules apply." He defines "developmental errors" as "errors (that) illustrate the learner attempting to build up hypotheses about the English language from his limited experience of it in the classroom or textbook" (p. 98).

Among the errors identified by Richards, the following were often encountered by the researcher: overgeneralization, ignorance of rule restrictions, incomplete application of rules, and false concepts hypothesized.

a) Overgeneralization: In order to understand the concept of "overgeneralization" we need to discuss first the concept of "generalization" or transfer. Jakobovits (1969: p. 32) defines it as:

> ...the use of previously available strategies in new situations...In second language learning...some of these strategies will prove helpful in organizing the facts about the second language, but others, perhaps due to superficial similarities, will be misleading and inapplicable (Jakobovits, 1969: p. 32).

"Overgeneralization" is the application of a general linguistic rule to a specific linguistic event where that rule does not apply. For example, most learners of English as a second language tend to omit the "s" in the third person singular when they pronounce verb forms such as "he work" (he works), "she study" (she studies). This is usually considered by researchers of error analysis as an overgeneralization of the rule applied to all the other forms of the present tense, which do not carry an "s" (I work, you work, we work, they work).

The tendency to overgeneralize has also been associated with the concept of reduction of redundancy. That seems to be the case in the tendency to drop the -ed ending of verb forms in sentences that require a time modifier. "I went to a movie yesterday" becomes "I go to a movie yesterday."

b) Ignorance of Rule Restrictions: Has to do with the tendency to ignore the restrictions that are associated with certain grammatical structures. For example, in English we say, "I asked him to do it," and "I told him to do it." A person learning English as a second language may ignore the restrictions associated by the distribution of the verb "make" and may say, "I made him to do it." Most errors associated with "ignorance of rule restrictions" are the results of analogical conceptualization of the rules.

c) Incomplete Application of Rules: This phenomenon is quite prevalent in the acquisition of question formation, especially in the case of "indirect speech." For example, the student may have learned to say "What time is it?" Then when using the introductory socially accepted form "Can you tell me . . .?" the student usually applies the "question" rule and says "Can you tell me what time is it?" Thus, these types of errors usually indicate the level of mastery that the student may have already achieved in learning the second language.

d) False Concepts Hypothesized: These types of errors occur because of incorrect comprehension of the various distinctions in the language being learned. A common error found in learners of English as a second language is the use of "is" as a marker to denote present tense. Thus, instead of saying "He speaks English," the student tends

to say, "He is speak English" or "He is speaks English."

For a comprehensive review of the literature on error analysis in first language acquisition, see Brown (1973), Klima and Bellugi (1966), Cazden (1972), and Dale (1976).

For a comprehensive review of the literature on error analysis in second language acquisition, see Dulay and Burt (1972, 1974a, 1975a and b), Ervin-Tripp (1974), Hernández-Chávez (1972), and for studies of children learning a second language see also Richards (1971, 1974), and Taylor (1975).

Performance Analysis Approach to Language Acquisition Research

At about the same time that second language acquisition research was concentrating on error analysis, researchers on first language acquisition were developing new methodologies for the study of linguistic performance. The study of the acquisition of negation by Klima and Bellugi (1966) and the study of the acquisition order of grammatical morphemes by Brown (1973) have been identified as the seminal treatises in the area of performance analysis.

The three researchers reported the findings of their analysis of performance in a longitudinal spontaneous-speech study of three children learning English as their first language. The most significant feature of these studies is that they analyzed speech production for an extended period of time, and also provided cross-referential

data about the acquisition of grammar by the three children.

These studies were significant to the researchers dealing with the acquisition of a second language by children because they provided normative data that enabled them to make comparisons across languages.

> The research also provided the motivation and methodology to search for universal orders of acquisition of structure across second-language learners. This method was a novel way of testing for the role of language transfer (Hakuta and Cancino, 1977: p. 303).

In their comprehensive review of the subject, Hakuta and Cancino have classified performance analysis studies into three categories: acquisition of negation, acquisition of grammatical morphemes, and acquisition of "prefabricated utterances." The latter are defined as "utterances that are learned as wholes without knowledge of internal structures but that have high functional value in communication "(p.303).

Studies on the Acquisition of Negation Structure

In their study on the acquisition of negation, Klima and Bellugi (1966) stated that learners of a first language go through three stages in the acquisition of negative utterances.

During the first stage, children utter a "negative particle" such as "no." This particle is usually outside the sentence nucleus in phrases such as "no eat" or "no mommy go."

During the second stage, children use the negative particle within the sentence nucleus, with units such as "can't"

and "don't" in sentences such as "Mommy don't like tapioca."

During the third stage, children are able to utter the full negative form, including the necessary inflections for number and tense: "He didn't like to go to the stadium."

As stated above, the study by Klima and Bellugi was conducted on children learning a first language. Their research was eventually replicated by Milon (1974), who applied their methodology to the analysis of second language acquisition by a five-year-old Japanese child learning English as a second language in Hawaii. Milon concluded that a second-language learner goes through roughly the same stages of development as a first-language learner in the acquisition of negations.

Milon's study was highly controversial at the time of its publication, since the findings and supporting evidence seemed to be inconclusive with respect to the application of the rules as designed by the Klima and Bellugi study.

Cazden, Cancino, Rosansky and Schuman (1975) studied the acquisition of negation in English by six Spanish-speaking students: two children, two adolescents, and two adults. The main purpose of the research project was

> . . . to make a preliminary investigation of the processes of second language acquisition by children, adolescents and adults, and to develop a methodology appropriate to the study of second language learning. In the development of the methodology, applicable techniques from first language acquisition research were incorporated

> and new techniques appropriate specifically to second language acquisition were devised (Cazden et al, 1975, Abstract).

The language acquisition of the students was analyzed for a period of ten months. The students were recorded every two weeks, and their speech was elicited in three different configurations: spontaneous speech, elicitations, and pre-planned socio-linguistic interactions.

The people being analyzed were so-called "free" second language learners, that is to say, they were learning English by natural exposure to the environment rather than by formal instruction.

Cazden et al summarized their findings as follows:

> The analysis focused on the acquisition of the English auxiliary and its related structures, the negative and interrogative. A clear developmental pattern was found for both the negative and interrogative. A highly variable order of acquisition was found for the appearance of auxiliaries (Cazden et al., 1975, Abstract).

The language acquisition pattern shown by the students did not quite coincide with the stages identified by Klima and Bellugi.

Hakuta and Cancino close the section on "negation" by stating:

> . . . it should be pointed out that the universality of Klima and Bellugi's stages has been questioned even in first-language learners . . . Owing to the tentative nature of the first-language findings, the second-language researcher needs to approach the task of comparing the two processes with extreme caution (p. 305).

Studies in the Acquisition of Grammatical Morphemes

Grammatical morphemes include noun and verb inflections, the copula and auxiliary "be," and the definite and indefinite articles. They are quantifiable, thus lending themselves for quantitative research, which provides a more rigorous methodology which in turn offers more valid and reliable findings.

The study of grammatical morphemes has also been considered of great value to researchers because they have a high frequency of occurrence in the language, and because it is quite easy to identify contexts in the language where their occurrence is obligatory. For example, the verb "speak" when attached to the pronoun "she" has the "obligatory" "s" which indicates third person singular.

Two studies of grammatical morphemes in the acquisition of first language provided the basic methodology for further research: Brown (1973) conducted a longitudinal study which identified fourteen morphemes in the speech of three native speakers of English.

> Defining acquisition as the point at which a given morpheme occurred in more than 90 per cent of obligatory contexts for three consecutive samples, he found that they were acquired in a roughly invariant order (Hakuta and Cancino, 1977: p. 306).

The study by Brown was replicated by de Villiers and de Villiers (1973) in a cross-sectional study of first language acquisition using a larger sample. Their study corroborated the findings reported by Brown.

> When Brown analyzed these morphemes according to semantic complexity and transformational cumulative complexity, he found that both factors predicted the obtained order but that they could not be separated (Hakuta and Cancino, 1977: p. 306).

The methodology developed by Brown and refined by de Villiers and de Villiers encouraged quite a few researchers to apply the same approach to the acquisition of grammatical morphemes in second-language learners.

Dulay and Burt (1974a) conducted a study of the order of acquisition of eleven morphemes by Chinese and Spanish-speaking children learning English. Their findings reported that both groups acquired English morphemes in very much the same order. They also found that the two groups acquired mastery of the morphemes in an order that was completely different from the order of acquisition shown by the monolingual children studied by Brown.

The similarity in the acquisition of English morphemes by two groups speaking two completely unrelated languages was considered particularly relevant by researchers at the time the findings were published. For example, both English and Spanish possess a linguistic marker to express articles, while Chinese does not have such a marker. Nevertheless, both groups of children, Chinese and Spanish speakers, showed similar degree of proficiency in their acquisition of English articles.

For a longitudinal study, researchers usually record observational data on a rather small number of subjects,

for an extended period of time. In a cross-sectional study, researchers record data on a larger number of subjects at one period of time.

The study conducted by Dulay and Burt falls into the category of cross-sectional approaches. It analyzed the speech samples of the children by using the methodology developed by Brown.

The basic question addressed in the study was to determine if two sets of children speaking two unrelated languages would show the same sequence in their acquisition of English morphemes.

In their rationale for the study, the authors present the sequence of events in their research which has been going on for a number of years. With respect to their research on error analysis, they say:

> Specifically, the types of errors in English that Spanish-, Chinese-, Japanese-, and Norwegian-speaking children make while still learning English are strikingly similar. This similarity of errors, as well as the specific error types, reflect what we refer to as "creative construction," more specifically, the process in which children gradually reconstruct rules for speech they hear, guided by universal innate mechanisms which cause them to formulate certain types of hypotheses about the language system being acquired, until the mismatch between what they are exposed to and what they produce is resolved (Dulay and Burt, 1978: p. 348).

When discussing their research on "natural sequences" in the acquisition of English grammatical structures by Spanish-speaking children, they state:

> We found that for three different groups of children - Chicano children in Sacramento, California; Mexican children living in Tijuana, Mexico, but attending school in San Ysidro, California; and Puerto Rican children in New York City - the acquisition sequence of the following eight structures was approximately the same: plural (-s), progressive (-ing), copula (is), article (a, the), auxiliary (is), irregular past (ate, took), 3rd person singular (-s), and possessive (noun-'s) (Dulay and Burt, 1978: p. 348).

The study comparing the Chinese-speaking children to the Spanish-speaking children had the same rationale as the one about the Spanish-speaking groups. The main objective was to test the hypothesis that if the process of "creative construction" played an important role in the acquisition of proficiency in second language, there should emerge a common sequence in the acquisition of grammatical structures among children speaking diverse and unrelated languages.

> In other words, if it is true that universal cognitive mechanisms (or strategies) are the basis for the child's organization of a target language, and if it is the L2 system rather than the L1 system that guides the acquisition process, then the general sequence in which certain English syntactic structures are acquired by children of different language backgrounds should be the same, with only minor individual variation (Dulay and Burt, 1978: p. 349).

After presenting a comprehensive description of the design, methodology, data collection, and data analysis of the study, the authors present their results in the following manner:

> We have waited long and labored patiently to answer the question: Is there a natural sequence of L2 acquisition common to children of diverse backgrounds, in particular to Chinese and Spanish-speaking children learning English? The results of our efforts are most rewarding.
>
> 1. The sequences of acquisition of 11 functors obtained for Spanish and Chinese children are virtually the same . . .
>
> 2. The same sequence of acquisition of 11 functors, obtained by three different methods, provides strong evidence that children exposed to nature L2 speech acquire certain structures in a universal order (Dulay and Burt, 1978: p. 3-360).

The authors conclude their article by providing some particularly insightful ideas concerning the value of their research findings in terms of the development of "universal strategies" for the preparation of methodologies and curricula for second language teaching.

Exemplary research studies dealing with grammatical morphemes are the following, among others: a) Longitudinal studies: Hakuta (1974a, 1976); Gillis (1975); Rosansky (1976); and Cancino (1976); b) Cross-sectional studies: Bailey, Madden, and Krashen (1974), and Larsen-Freeman (1976).

Studies in the Acquisition of Routine Formulas and Prefabricated Utterances

"Routine formulas" are fixed expressions which are usually learned as whole utterances by means of imitation of native speakers. Examples of routine formulas are: "I don't know," "What's the time?," and "By the way."

"Prefabricated patterns" are variants of routine formulas, where nouns can be inserted into slots within the pattern to create new sentences. Examples of prefabricated patterns are "This is a _____," and "We went to the _____."

Researchers have traditionally paid little attention to these two kinds of linguistic formations, maybe because their "fixedness" did not offer the opportunity for "dramatic" findings.

One of the first studies to report on routine formulas was the one conducted by Huang (1971).

Huang used the same methodology developed by Klima and Bellugi (1966) and Brown (1973). He was the first researcher to apply the methodology to the study of second language acquisition. His study tried to answer a number of closely related questions, which had not been addressed in previous studies.

> For example, could one legitimately separate out part of the data and say that these parts were unanalyzed chunks that the learner had acquired? If not, then no clear acquisition process could be seen. When could one talk about these same units as part of the child's rule-governed language system? How could one discuss the role of imitation in the child's language learning process at a time when linguistic theory said imitation was of negligible importance? If one found structures similar to that in first-language data, could this be called developmental? (Huang and Hatch, 1978: p. 119).

Huang's study reports on the acquisition of English structures by Paul, a Chinese child arriving from Taiwan. Before coming to the U.S.A., he spoke only Taiwanese, and did not have

any exposure to English. One month after arriving in Los Angeles, Paul was enrolled in a play-school and, for four and a half months, he was observed daily and his acquisition of English was carefully and systematically recorded. Paul's acquisition of routine formulas is reported as follows:

> In the third day of observation, Paul began muttering, "Get out of here" to himself. On the way home, he asked what it meant. When JH (Joseph Huang) instead of telling him, asked what had happened, Paul replied that a boy had said "ma-ai-den-me chia la" (don't be/stay here) to him. A day later, Paul was on a tricycle. Another child, M., holding onto the handle bars, kept bothering him. In exasperation, Paul shouted, "Get out of here!" Paul had learned the utterance as an unanalyzed unit. He knew the meaning of none of the words separately. When asked about the words, his response each time was "m-chai" (I don't know). Yet he understood its meaning in a global sense, stored it in memory, and recalled it for use in the appropriate situation (Huang and Hatch, 1978: p. 121).

Wong-Fillmore (1976) also reports extensively on the acquisition of prefabricated forms by Spanish-speaking children learning English as a second language. She indicated that analysis of these forms led to subsequent development of linguistic structures.

> All of the constituents of the formula become freed from the original construction; . . . what the learner has left is an abstract structure consisting of a pattern or rule by which he can construct like utterances (p. 645).

Other research studies reporting on routine formulas are Hakuta (1974b-1976), Adams (1974), Cazden et al (1975), and Butterworth (1972).

Studies in the Acquisition of Discourse

During the late 70's and at the dawn of the 80's we have witnessed great interest in linguists, psychologists, and educators in studying discourse not only in terms of form but also in terms of meaning and substance. There seems to be general agreement among language acquisition researchers that "human communication" needs to be analyzed and described in terms of at least three levels: meaning, form, and substance, or in more technical terms, discourse, syntax, and phonology.

> Learners need to become analysts of discourse themselves, and in confronting a foreign language we should help them by encouraging a use of existing discoursal awareness in their mother tongue while providing them with a workable model of analysis for the organizing of the data (Coulthard, 1977: p. XIII).

Coulthard (1977) states that for many years American linguistics studies concerned themselves only with phonological, lexical, and syntactic features of language, mostly as a result of Bloomfield's influence on their thinking. In his seminal treatise, Bloomfield stated (1933) that linguists "cannot define meaning, but must appeal for this to students of other sciences or to common knowledge" (p. 27).

During the last ten years, there has been a renewed emphasis on discourse analysis as a tool to determine language acquisition.

Discourse analysis is central to the development and refinement of applied linguistics and the teaching of second

languages to children.

Discourse analysis lends itself with great potential for future research both in the theory and application of language acquisition. The information provided by research on discourse analysis should have a great impact on language teaching and curriculum for bilingual studies.

One of the most fascinating aspects of language acquisition is that fluent speakers are able to produce an infinite number of grammatically correct sentences which they have never heard before. This fact creates one of the great challenges to the researcher who is trying to determine finite constructs, structures and features.

In the opinion of Moore (1964) and Entwisle (1966), "learning theory of any school is least satisfying when applied to the two chief accomplishments of early childhood - learning to walk and learning to talk (Entwisle, 1966: p. 4). This view has been shared by quite a few theoreticians and researchers such as Chomsky (1959), Lenneberg (1964), and Miller (1964). Davis (1937) has indicated that <u>all</u> grammatical constructions used by fluent adults are already present in eight-year-old children.

There seems to be enough evidence that children have acquired all features of language before age ten.

Katz and Fodor (1963) have indicated that "It is first necessary to know <u>what</u> is acquired and used" (p. 172), in order to indicate parameters and scope of the language

acquisition pattern in young children.

Observational data and empirical data are necessary to develop an accurate profile of children's language acquisition. Chomsky (1964) indicates that ingenious experiments are needed to get data on language competence as opposed to language performance.

Basically, the thesis that is being presented here goes hand-in-hand with the thesis presented by Peck (1978) who suggests the possibility that conversational analysis be used as a methodology for research on second language acquisition.

Hatch (1978) cautions us that the work being done in discourse analysis is in an embryonic stage. "We don't have a good description of what the rules of conversation might be for native speakers, whether adult or child; naturally we have little idea of what the conversational analysis method might give us (or what kind of morass it might lead us into) for second language learning." (p. 401).

Hatch's words are particularly relevant to a field such as bilingualism and education of bilingual children, where much needs to be done in the refinement of language teaching, curriculum development, reading in bilingual classrooms, and training of instructional personnel.

Studies on Discourse Analysis and Related Language Acquisition Factors

Three researchers have been systematically identified as the pioneers in the area of discourse analysis: Firth,

Harris, and Mitchell.

Firth (1951) was one of the first linguists to insist that linguists should study the total verbal process in its context of situation. This means that he urged linguists to study the flow of language in conversation, since "it is here that we shall find the key to a better understanding of what language is and how it works." (p. 21).

Harris (1952) produced a formal method for recording and analyzing connected speech or writing. In his study he indicated that a whole text can be studied by means of distributional analysis, in order to discover structuring above the rank of sentence. He indicated that "in grammar it is possible to set up word classes distributionally and produce a class of adjectives A which occur before a class of nouns N" (Coulthard, 1977: p. 3).

Mitchell (1957) offered an analysis of discourse based on semantic criteria. He presented a highly organized hierarchy of relevant linguistic features, elements, and participants.

During the late 60's and through the 70's a large number of studies have been conducted in the area of second language acquisition. Listed below are some of those studies particularly relevant to the research design being reported here:

Cornejo (1970, 1974), and González (1978) analyzed the speech of bilingual Spanish-speaking children of Central and South Texas. Those two studies formalized the methodology for subsequent research on the acquisition of discourse by

bilingual children.

Labov (1972) indicated that one of the most important aspects of discourse analysis is to be able to distinguish "what is said from what is done" (p. 136). According to him, the study of language interaction should focus on the functional use of the language.

Hymes (1972) called the linguistic unit "speech act" and stated that it "represents a level distinct from the sentence and not identifiable with any single portion of other levels of grammar, nor with segments of any particular size defined in terms of other levels of grammar." (p. 49).

Dulay and Burt (1972, 1974, 1975) and Hatch (1978) have investigated the acquisition of morphemes in second language learning and compared it to first language acquisition strategies. They have tried to determine if there is an "invariant" order of acquisition.

Swain (1974) has analyzed the appearance of morphemes in the two languages spoken by English-French speaking bilingual students, and compared them for imitation, translation, and production.

Adams (1974) did the same type of study in the area of occurrences of morphemes in the two languages spoken by the bilingual child. While Swain's study was conducted with English-French speaking children, Adams discussed language acquisition patterns in Spanish-English speaking children.

Bailey, Madden and Krashen (1974) have reported on morpheme counts in adults and have tried to determine if they are acquired in the same order as they are acquired in childhood.

Rosansky (1976) has studied linguistic strategies, methods, and morphemes and their occurrence in the acquisition of second languages.

Coulthard (1977) and Hatch (1978) have presented comprehensive overviews and in-depth analyses of the background, on-going research, and promise of discourse analysis as a technique to determine the most efficient way to foster second language acquisition in children.

Discourse analysis has to do with the study of language in the social context. Hakuta and Cancino have classified discourse analysis studies into two approaches: `a) Research dealing with the "rules" of discourse, such as the rules that govern turn taking in dialog interaction. Representative studies in this area are those conducted by Garvey (1975) and Keenan (1975). In order to fully interact in the conversation, the speaker is expected not only to master the rules of syntax, but also the rules of discourse. b) The second approach assumes that language is pragmatic.

> Pragmatics is defined as the study of the correspondence of linguistic forms to contexts. It logically includes syntax and semantics (Oller, 1973: p. 47).

Studies based on an analysis of the pragmatics of language have dealt with the emergence of pragmatic functions such as imperatives and declaratives. Proponents of pragmatics

advocate that semantics and syntax are basically derivatives of pragmatics. As Hakuta and Cancino suggest, "An interesting approach. . .would be to analyze a given pragmatic function over time." (p. 310).

In the 1980's several studies are taking place in the areas of language acquisition, language development, and the relationship between language and reading. One of them is the research being conducted by Moll, Estrada, Díaz, and Lopes (1980) at the Laboratory of Comparative Human Cognition, University of California at San Diego. That group has been funded by NIE to do research in the areas of discourse and verbal interactions of bilingual children. The main purpose of their study is to identify the processes of discourse development in bilingual children.

Several publications have appeared in the last four years dealing with the topic of theories and research on second language acquisition.

For a thorough and comprehensive overview of the topic, you are encouraged to consult the following publications:

a) Second Language Acquisition Research: Issues and Implications by William C. Ritchie (1978).

b) Second Language Acquisition: A Book of Readings, by Evelyn M. Hatch (1978).

c) Understanding Second Language Learning, by Jack C. Richards (1979).

d) Discourse Analysis in Second Language Research, by Diane Larsen-Freeman (1980).

e) An Introduction to the Teaching of English as a Second Language, Vol. II, by Marianne Celce-Murcia (forthcoming).

f) Discourse Analysis in Bilingual Children, by Ricardo J. Cornejo (forthcoming).

CHAPTER FOUR

EXEMPLARY RESEARCH STUDIES ON LANGUAGE ACQUISITION AND COMMUNICATIVE COMPETENCE*

Listed here are 50 exemplary research projects which have been published through the ERIC System.

We felt that these abstracts would provide a fairly comprehensive listing of studies which, since they are in the ERIC System, would be readily accessible to people interested in doing research or getting information on specific studies. The information provided about each one of the studies has been summarized from the abstracts that have been fed into the system.

In the selection of these projects we used the following criteria: a) they have to deal with research on first and/or second language acquisition; b) must be based on empirical research data; c) they offer potential for replication; and d) their findings offer relevant information to the field.

* The studies listed here are not included in the References.

Abstracts

Beebe, Leslie M. "The Influence of the Listener on Code-Switching," Language Learning, XXVII, 2 (December 1977), 331-39. (EJ199668)

This paper describes research that investigated the influence of the listener on the dialectical code-switching behavior of a group of Chinese-Thai bilingual teachers.

Biehn, Aubrey. "Peer Teaching in the Valley of Genesee," Hispania, XXCIII, 4 (December 1975), 929-931. (EJ134629)

A program is described in which advanced high school language students acted as tutors in Spanish and French in a FLES program.

Brent-Palmer, Cora. "A Sociolinguistic Assessment of the Notion 'Im/Migrant Semilingualism' from a Social Conflict Perspective" Working Papers on Bilingualism, No. 17. (Also in RIE, October 1979.) (ED171114, 45 pp.)

This study challenges the Toukamaa and Skutnabb-Kangas theory of semilingualism and suggests that an integrated set of sociological and sociolinguistic factors can predict the performance of minority bilinguals in school. Semilingualism is described as a low level of competence in the minority language, a linguistic handicap that prevents the individual from acquiring the linguistic skills appropriate to his original language capacity in any language.

Bruck, Margaret. "The Suitability of Early French Immersion Programs for the Language Disabled Child." Department of the Secretary of State, Ottawa (Ontario). (Also in RIE, September 1978.) (ED153460)

This is the second report of a longitudinal project initiated in 1970, in which children with and without language problems are identified in French immersion and English kindergartens and closely monitored to the end of Grade 3. This study investigates the desirability of early French

immersion program for English-speaking children with language learning disabilities.

Burstall, Clare. "An 'Optimum Age' for Foreign-Language Learning," English Teachers' Journal (Israel), XIV (November 1975), 23-26. (EJ129514)

Contentions that foreign languages are best learned at a young age are refuted by newer research. The amount of time spent studying a language is the most important factor, with older learners more efficient than younger ones.

Chen, Margaret. "The L1 Acquisition of English Negative WH-Questions: A Case Study." M.A. Thesis, Hunter College. (Also in RIE, February 1980.) (ED176553, 55 pp.)

This paper investigates the development of negative WH-questions in a four year old subject acquiring English as her L1. Spontaneous and elicited speech samples were collected over a period of 6 months.

Chimombo, Moira. "A Study of Code-Mixing in Bilingual Language Acquisition," RIE, September 1979. (ED169786, 23 pp.)

The nature and extent of code-mixing in the language acquisition process over a 12-month period was studied with a child growing up in a bilingual English-Chichewa (Bantu language) speaking home. Data are examined from age 18-1/2 months to 30-1/2 months. Definitions of code-switching are offered, and an analysis of code-mixing in the speech of the author's daughter is presented.

Coballes-Vega, Carmen and Joel Walters. "The Dual Language Model Reconsidered," RIE, December 1979. (ED174047, 19 pp.)

Spatial and temporal factors in the bilingual classroom that can be manipulated to maximize the bilingualism of Spanish-speaking elementary school children (that is to

minimize their lexical code switching) are presented in terms of models.

Collard, Lucien. "Age and Language Learning," Babel: Journal of the Australian Federation of Modern Language Teachers' Associations, XIII, 2 (July 1977), 40-5. (EJ172001)

An investigation of the differences between first and second language acquisition and the relationship between age and second language learning. The stages in native language acquisition and the advantages of an early start in second language learning are discussed.

Dearhott, D. W. "Toward a Probabilistic Automata Model of Some Aspects of Code-Switching," Language in Society, VII, 3 (December 1978), 411-19. (EJ196358)

The purpose of the model is to select either Spanish or English as the language to be used; its goals at this stage of development include modeling code-switching for lexical need, apparently random code-switching, dependency of code-switching upon sociolinguistic context, and code-switching within syntactic constraints.

Doye, Peter. "Primary English: A Research Project on the Teaching of English in German Primary Schools," English Language Teaching Journal, XXXIV, 1 (October 1979), 29-34. (ET214442)

Discusses a research project carried out in Germany to compare the English proficiency of secondary students who had begun studying English in the Third Form (eight years old) with those who had begun in the Fifth Form (10-11 years old.)

Eckstrand, Lars Henne. "Age and Length of Residence as Variables Related to the Adjustment of Migrant Children, With Special

Reference to Second Language Learning." Paper presented at the International Association of Applied Linguistics (AILA) Congress, 1975. (Also in RIE, February 1977.) (ED129100, 14 p.)

About 2,200 immigrant children in Sweden were studied by means of tests and teacher questionnaires. The children, representing 36 nationalities, were born outside Sweden and were distributed over the nine grades of the Swedish comprehensive school. Various functional language skills in Swedish as a second language (L2), nonverbal intelligence and socio-emotional adjustment as measured by teacher opinions were studied as functions of age and length of residence.

Fathman, Ann. "The Relationship Between Age and Second Language Productive Ability," Language Learning, XXV, 2 (December 1975), 245-253. (EJ134672.)

A test was administered to 200 children (ages 6-15) who were learning ESL to study the relationship between age and the rate of learning.

Gal, Susan. "Peasant Men Can't Get Wives: Language Change and Sex Roles in a Bilingual Community," Language in Society, VII, 1 (April 1978), 1-16. (10605 62-5)

Notes that language shift from German-Hungarian bilingualism to the exclusive use of German is occurring in the community discussed here. Young women are further along in the direction of this change than older people and young men. The linguistic contrast between German and Hungarian is shown to represent the social dichotomy between newly available worker status and traditional peasant status.

García, Eugene E. and Alex Trujillo. "A Developmental Study of Spanish-English Production in Bilingual Children," Journal of Educational Psychology, LXXI, 2 (April 1979), 161-168. (EJ203976)

Spanish-English bilingual and English monolingual children imitated Spanish and English lexical and syntactic constructions. Lexical items contained "high risks" phonemes. Sentence constructions emphasized plurality, possessiveness, and adjective-noun word order.

Gardner, Robert C. "Cognitive and Affective Variables in Foreign Language Acquisition." Research Bulletin No. 14, Department of the Secretary of State, Ottawa, Ontario. (Also in RIE, November 1978.) (ED155929, 15 pp.)

This is a discussion on the role that cognitive and affective variables play in second language learning. The variables under consideration are: (1) intelligence; (2) language aptitude; (3) motivation; and (4) anxiety. Specifically, this report focuses on the importance of attitudinal and motivational factors in achievement.

Genesee, Fred. "Second Language Learning and Language Attitudes," Working Papers on Bilingualism, XVI. (Also in RIE, June, 1979.) (ED165475, 24 pp.)

An investigation was undertaken to assess student attitudes toward learning and using French and their reasons for studying it. It was felt that a more thorough knowledge was needed of some of the non-educational, social consequences of immersion programs.

Genishi, Celia Shinobu. "Rules for Code-Switching in Young Spanish-English Speakers: An Exploratory Study of Language Socialization." Doctoral dissertation, University of California, Berkeley. (Also in RIE, June 1978.) (ED149330, 210 pp.)

This study describes rules of code-switching (choice between languages) in four six-year-old Spanish/English bilinguals in a school setting, to show that bilingualism is a sociolinguistic competency.

Hatfield, Nancy and others. "Deaf Students' Language Competency: A Bilingual Perspective," American Annals of the Deaf, CXIII, 7 (November 1978), 847-51. (EJ194225)

To assess competency in American Sign Language (ASL) and Manually Coded English (MCE), 219 National Technical Institute for the Deaf students, judged to be skilled signers, viewed videotape stories, one in ASL and one in MCE, followed by true/false questions in the same language as the story.

Heiser, M.F. "Amerindian Language Loyalty, Acculturation, and Language Competence." Paper presented at the Annual Southwest Area Languages and Linguistics Workshop, 1974.

Research and testing results from a 1972 study of Navajo children learning English as a Second Language are described. The subjects were 25 second grade Navajo children at Foyei Boarding School in Arizona who were exposed to native Navajo speakers as dormitory aides. The asumption on which the study was based was that recognition of the worth of the native language outside of the classroom would create an atmosphere favorable to the learning of English.

Hoffman, Charlotte and Francisco Ariza. "Bilingualism in a Two-Year-Old Child." Paper presented at the British Association for Applied Linguistics Annual Meeting, 1978. (Also in RIE, October 1979.) (ED1150)

Infant bilingualism can be defined as a child being exposed to two or more languages from birth. Because of the dearth of first hand research on the effect of a bilingual environment on a child's speaking patterns, parents from multilingual backgrounds raised their daughter in a bilingual environment, German and Spanish, in England.

Huerta, Ana. "The Acquisition of Bilingualism: A Code-Switching Approach," Working Papers in Sociolinguistics, No. 39.

(Also in RIE, November, 1978.) (ED155916, 38pp.)

Research was conducted to examine the language acquisition of a Mexican-American child who has been brought up in a linguistic environment where code-switching between Spanish and English is the dominant style of speaking. In addition, the relation of code-switching to the acquisition of bilingualism is analyzed.

Hymes, Dell. "Kam's Account of Transitional Unilateral Code-Switching," Anthropological Linguistics, XVIII, 1 (January 1976) 27-28. (EJ138232)

Discusses the transitional unilateral code-switching observed in speakers of Hakka when speaking Cantonese.

Jacobson, Rodolfo. "Social Implications of Intra-Sentential Code-Switching." Paper presented at the Annual Meeting of the South Central Modern Language Association, 1976. (Also in RIE, August 1977.) (ED136587, 57 pp.)

The objectives of this study were to examine a body of data collected by five graduate students at the University of Texas at San Antonio and to determine, after a careful analysis of the transcribed utterances, whether all instances of language alternations can be truly considered code-switching strategies and whether those that can be so considered exhibit identifiable linguistic patterns and allow psychologically and sociologically sound interpretations.

Kentric, Dragica. "Some External Factors Which Might Affect L2 Learning." Paper presented at the symposium, "Problems of Child Speech," 1979. (Also in RIE, May 1980.) (ED180239, 18 pp.)

Yugoslav elementary school students of English as a second language were the subjects of a longitudinal study to determine factors influencing the acquisition of correct English pronunciation. The students were tested for their

ability to articulate 32 sounds within ten specific English words.

Krashen, Stephen D. and others. "Age, Rate and Eventual Attainment in Second Language Acquisition," TESOL Quarterly, XIII, 4 (December 1979), 573-82. (EJ214430)

Presents evidence of generalizations concerning the relationship between age, rate, and eventual attainment in second language acquisition.

Lamendella, John T. "General Principles of Neurofunctional Organization and Their Manifestation in Primary and Non-Primary Language Acquisition," Language Learning, XXVII, 1 (June 1977), 155-196. (EJ164490)

Attempts to characterize and contrast aspects of functional organization of neuropsychological systems carrying out primary language acquisition and two types of nonprimary language acquisition: secondary language acquisition and foreign language learning.

Larsen-Freeman, Diane and Virginia Strom. "The Construction of a Second Language Acquisition Index of Development." Paper presented at the Los Angeles Second Language Research Forum, 1977. (Also in RIE, January 1980.) (ED175290, 13 pp.)

Compositions written by 48 university students of English as a second language (ESL) were examined as a step in the development of an index for proficiency in a second language.

McClure, Erica F. Aspects of Code-Switching in the Discourse of Bilingual Mexican-American Children: Technical Report No 44. (Also in RIE, January 1978.) (ED142975, 38 pp.)

This paper examines the formal and functional properties

of code-switching among Mexican-American children. Two formal types of code-switching, code-mixing and code-changing, are identified, and developmental patterns in their use are discussed.

Meloni, Christine Foster. "Code-Switching and Interference in the Speech of an Italian/English Bilingual Child: Age 6.5 to 8 years." Rassegna Italiana Di Linguistica Applicata, X, 2 (May-December 1978), 89-95. (EJ199732)

This study documents the instances of code-switching and interference in the speech of a bilingual child living in Rome, Italy, with his American mother and Italian father.

Oller, John W. Jr. "Self-Concept, Other Concept, and Attained Second Language Proficiency." Paper presented at the special session on "Sociolinguistics and the Teaching of Modern Languages" at the Annual Meeting of the Modern Language Association, 1976. (Also in LEKTUS: Interdisciplinary Working Papers in Language Sciences, Special Issue.) (Also in RIE, July 1977.) (ED135228, 12 pp.)

A return to basic inductive research methods is recommended. Specifically, the scientific method of "strong interference" ought to be applied in attempts to prove hypotheses concerning the relationship that may exist between attitude variables and the learning of a second or foreing language. Thirteen hypotheses drawn from the literature are discussed here.

Oyama, Susan. "A Sensitive Period for the Acquisition of a Nonnative Phonological System," Journal of Psycholinguistic Research, V, 3 (July 1976), 261-283. (05434 57-3)

60 Italian-born male immigrants who had learned English at various ages and who had been in the U.S. between 5 and 18 years were judged for degree of accent in English.

Prokop, Manfred. "The Attitudinal Component of the Foreign Language Learning Process." RIE, March 1976. (ED113970, 31 pp.)

The paper presents a comprehensive summary of recent research on attitudes in foreign language instruction, discusses it in the light of four functions originally thought of as being characteristic of attitudes, and comments on the usefulness of the attitude concept in foreign language education.

Ramsey, Craig A. and E. N. Wright. "Age and Second Language Learning," Journal of Social Psychology, LXXXXIV, 1 (October 1974), 115-121. (05277-53-3)

Describes a study of 5th, 7th and 9th grade "New Canadians" on the relationship between age on arrival and achievement in English language skills.

Schumann, John H. "Affective Factors and the Problem of Age in Second Language Acquisition," Language Learning, XXV, 2 (December 1975), 209-235. (EJ134676)

Based on a synopsis of research studies, the relationship of second language learning to affective factors, such as language shock, attitude motivation, ego permeability, etc. is examined. Also, it is suggested that affective variables may be more important than maturation in the problems of adults in learning a second language.

Scotton, Carol Myers and William Ury. "Bilingual Strategies, The Social Functions of Code-Switching," Linguistics, CXCIII (June 1977), 5-20. (EJ173759)

A study of code-switching, the use of two or more linguistic varieties in the same interaction. Code-switching as interpreted in this study is a meta-interactional code which is activated to signal a change in direction of the interaction.

Seliger, Herbert W. and others. "Maturational Constraints in the Acquisition of Second Language Accent," Language Sciences, XXXVI (August 1975), 20-22 (EJ124355)

Gives the results of a survey showing that the age factor, rather than the learning situation, is the predominant variant in learning the pronunciation of a second language. As Eric Lenneberg suggested, puberty may indeed be an important turning point in language learning ability.

Sienkiewicz, Linda. "Phonological Evidence for Coordinate and Compound Bilingualism." Papers in Linguistics, 1974-1977: A Collection of M.A. papers from students in the Linguistics Department of Northeastern Illinois University. (Also in RIE, March 1979.) (ED161291, 24 pp.)

The phonological switching process of 16 bilingual (Spanish-English) adults were observed to provide phonological evidence for the coordinate-compound theory of bilingualism. Each subject was categorized as a coordinate or compound based on responses to a questionnaire. Subjects were recorded reading a mixed list of Spanish and English words.

Smythe, Padric C. and others. "The Best Age for Foreign-Language Training: Issues, Options and Facts," Canadian Modern Language Review, XXXII, 1 (October 1975), 10-23. (EJ131057)

This article examines the evidence and arguments for and against the position that young children are better equipped to profit from foreign language studies than adults, with special reference to FLES programs. Adult and child learning patterns are compared, along with the formal and informal contexts of language acquisition.

Snow, Catherine E. and Marian Hoefnagel-Hohle. "The Critical Period for Language Acquisition: Evidence from Second Language Learning," Child Development, XXXXIL, 4 (December 1978), 1114-28. (EJ196662)

The naturalistic acquisition of Dutch by English speakers of different ages was examined longitudinally to test the hypothesis that second language acquisition is most efficient before the age of puberty when cerebral lateralization is complete.

Stern, H. H. "Optimal Age: Myth or Reality," Canadian Modern Language Review, XXXII, 3 (February 1976), 283-294. (EJ138211)

This article discusses the question of the optimal age for second language learning by providing some background and by comparing relevant British and Canadian language teaching programs.

Strevens, Peter. "The Rival Virtues of Innocence and Sophistication: A Rationale for Teaching Pronunciation." Paper presented at the Annual TESOL Convention, 1972. (Also in RIE, May 1973.) (ED071504, 13 pp.)

Teaching pronunciation is more like gymnastics than linguistics because it involves converting a series of mental processes into motor activity. Many variables contribute to the facility with which a student will learn pronunciation, but age causes the greatest variation in standards of pronunciation learning between individuals.

Stroinigg, Dieter. "Counseling - Learning" A Practical Application in FL Learning," RIE, July 1977. (ED135250, 11 pp.)

This paper describes a method of language teaching known as counseling-learning, which attends to the psychological and emotional needs of students. The traditional approach to language instruction has generally underestimated this aspect of learning and its importance. The counseling-learning method relies on untapped sources within the student as positive factors, including the innate desire to learn. The psychological blocks inherent in the authoritarian nature of the normal classroom situation are removed.

Swain, Merrill. "Future Directions in Second Language Research." Paper presented at the Los Angeles Second Language Research

Forum, 1977. (Also in RIE, August 1980.) (ED184296, 16 pp.)

Progess that had been made in second language research in the last two years and future directions in the research methodology of second language studies were discussed. In order to examine the continuation and expansion of current research, the research reported by Schumann (1976) is compared with current research as represented by the titles of papers being given at the 1977 Los Angeles Second Language Research Forum.

Thelander, Mats. "Code Switching or Code-Mixing," Linguistics, CLXXXIII (December 1976), 103-123. (EJ160564)

An attempt to apply Bloom's and Gumperz' model of code-switching to a small Swedish community in northern Sweden, Burtrask. The informants spoke standard Swedish, the Burtrask dialect, and a third variety which was a combination of the two.

Tiglac, Aurelia D., Clemencia S. Capco, and Richard G. Tucker. "Filipino and English Word Associations by Filipino-English Bilinguals," Philippine Journal of Psychology, IV, 1 (June 1971), 37-43. (00650 49-1)

Collected Filipino and English responses to each of the 1st 50 Kent-Rosanoff stimulus words and their Filipino translation, from 290 Kindergarteners and 3rd, 6th, and 10th graders.

Trabert, Judith A. "Expectancies for Success or Failure: A Role in Foreign Language Learning." Paper presented at the Los Angeles Second Language Research Forum, 1977. (Also in RIE, January 1980.) (ED175292, 6 pp.)

Studies of motivation as a factor in learning success imply that, in second language learning, low self-expectancy for success leads to a low level of motivation no matter how attractive foreign language programs might be.

Walberg, Herbert J. and others. "English Acquisition as a Diminishing Function of Experience Rather than Age," TESOL Quarterly, XII, 4 (December 1978), 427-37. (EJ192636)

Research was carried out on Japanese children in the United States to test the hypothesis of early age sensitivity in second language learning.

Walters, Joel. "Language Variation, Politeness and Bilingual Children." Paper presented at the American Educational Research Association Symposium on New Perspectives on Research with Linguistically and Culturally Different Children, 1979. (Also in RIE, January 1980.) (ED175275, 20 pp.)

Three similar experiments were conducted to assess language variation and politeness in the speech of English monolingual and Spanish-English bilingual children, and in Armenian children learning English as a second language. Each experiment elicited request strategies from the children with the use of puppets in a structured conversation.

Wiens, Arthur N. and others. "Speech and Silence Behavior of Bilinguals Conversing in Each of Two Languages," Linguistics CLXXII (May 1976), 79-94. (EJ146696)

A study was made investigating whether or not the two-person conversational speech behavior (mean duration of utterance, mean reaction time, latency and frequency of interruption) of an individual who is fluent in two languages is the same or different when he is conversing in each of these two languages.

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